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ABSTRACT

Approximately 200 employees of small and medium sized businesses participated in a study to determine if their task characteristics affected the communication network roles they enact. Specifically, the study investigated the effects of variety, autonomy, task identity, feedback, dealing with others, and friendship opportunities on the network role enactment of isolates (employees with few relationships within the organization), liaisons (those with links to two or more groups), and group members (employees who have more ties with each other than with other organizational members). Results of a discriminant analysis procedure supported the idea of the overall influence of task characteristics on role enactment. In particular: (1) autonomy and identity were associated with the role of isolate; (2) variety was associated with group members; and (3) feedback and dealing with others were associated with liaisons. Friendship opportunities failed to discriminate among the roles. (FL)

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THE INFLUENCE OF TASK CHARACTERISTICS UPON TASK-COMMUNICATION NETWORK ROLES

By

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THE INFLUENCE OF TASK CHARACTERISTICS UPON TASK-COMMUNICATION NETWORK ROLES

Task characteristics of job incumbents' jobs were hypothesized to affect the network roles that they enact. Six small and medium sized organizations were used to test hypotheses concerning the effects of variety, autonomy, task identity, feedback, dealing with others, and friendship opportunity upon the network role enactment of isolates, liaisons, and group members. Results of a discriminant analysis procedure supported the notion of the overall influence of task characteristics upon role enactment. Specifically, autonomy and identity were associated with the role of isolate; variety was associated with group members, and feedback and dealing with others were associated with the enactment of the liaison role. Friendship opportunities failed to discriminate between the network roles. Results were discussed and implications for future research and application of results were included.

Since Barnard (1938) noted the importance of communication in organizational functioning, the communication component of organizations has become a major focus of study. One of the most promising approaches to understanding communication within the organization is network analysis (Jablin, 1980). Porter and Roberts (1976), in their review of organizational communication research, noted that there is a lack of "data concerning relationships between communication patterns and other organizational phenomena" (p. 1584). This study represents one attempt to fill that void by examining the relationship between communication networks and task characteristics.

Organizations exist in order to fulfill a goal. That goal is accomplished through the execution of a variety of tasks, each incorporating a number of different task characteristics. The tasks or jobs that are performed in an organization have been characterized in a number of ways (Pugh, Hickson, Hinings, MacDonald, Turner, & Lupton, 1963; Van de Ven, 1976). A frequently used approach which describes job characteristics with six dimensions was developed by Hackman & Lawler (1971) and Hackman & Oldham (1975, 1976). Sims, Szilagyi and Keller (1978) describe the characteristics as follows. Variety refers to the number of different activities performed and pieces of equipment used in accomplishing the job. Autonomy indicates the amount of responsibility an employee has in scheduling, choosing materials, and picking procedures in his/her job. Task identity describes the extent to which an employee does a complete piece of work or can tell what product comes from his/her work. Feedback indicates how much information a job incumbent receives concerning his/her

performance. Dealing with others is the extent to which organizational employees must interact with others in order to do their job. Finally, friendship opportunities refers to the chances that an employee has to develop non-work related relationships with other employees (p. 197). The usefulness and predictive validity of the six job characteristics in organizational behavior research is demonstrated by the numerous studies which have investigated them (Roberts and Glick, 1981).

Tasks performed in the organization are interdependent. Each is necessary to fulfill the organizational goal and all tasks must be coordinated in such a way that the overall goal is accomplished. Task-related communication networks are the means by which these various tasks are coordinated (Blau, 1970; Lawrence & Lorsch, 1969; Hage, Aiken & Marrett, 1980).

Communication networks are the summation of all of the many communication behaviors enacted by all of the organizational members and are based at the most fundamental level on dyadic relationships. A person's place in the task-communication network is determined by indications of how frequently he/she communicates (builds links) with others, and with how many others those links are built. A convenient summation of these linkages in role classification (Farace & Maybee, 1980). Roles usually distinguish between participating communication behaviors and non-participating communication behaviors of organizational members (Farace, Monge, & Russell, 1977). Three common roles have received much attention in the literature. The isolate role is applicable to an organizational member who has few relationships within the organization. The second role is group member.

Groups consist of several people who have indicated that they have more ties with each other than with other organizational members outside the group. Several criteria are used to define which collections of individuals may be considered a group (Richards, 1975). Finally the liaison role is applied to an organizational member who has dyadic communication linkages with members of two or more groups, but who is not categorized as a member of any single group because he/she does not have enough ties with all of the other group members (Farace, et al., 1977).

The communication roles enacted by organizational members are dependent upon the task characteristics of the job that they do. Tasks which require a great deal of coordination necessitate a different type of communication network (or configuration of roles) than do tasks which need a minimum of integration. For example, a network which must coordinate three assembly line, three research and development employees, and one manager is different from the network required to coordinate six salespersons and one manager because the tasks themselves are related to each other in different ways.

Empirical investigations by Albrecht (1979, 1984) shed more light on job characteristic effects on network role enactment. In her first study (1979), she examined the relationship between communication networks and communication climate. Albrecht obtained data on perceptions of "the job" and compared closeness ratings for it to "self" between key communicators (including liaisons and bridges) and non-key communicators (including all other network roles). She found that key communicators ranked "the job" as closer to "self" than did non-key communicators. Additionally, key

communicators indicated that "the job" was more central in their perceptions than did non-key communicators. In her second study, Albrecht (1984) tested the relationship between climate and network roles in a longitudinal research design. Again, she found support for the notion that liaisons identified more closely with their jobs than did non linkers, and the concepts of "self" and "job" got closer over time for liaisons, but did not for non-linkers.

Albrecht's results demonstrate that the perceived combination of all characteristics of the job that an organizational member does is related to the communication network role that he/she enacts. However, her operationalization of the job as a respondent's overall perception of "the job" is vague. It does not determine the particular characteristics of the job that leads to the differential communication role enactment of linkers (liaisons) and non-linkers (group members and isolates). In order to be able to predict which job characteristics lead to specific role enactment, a more detailed examination of the job needs to be made. Thus, one basic hypothesis was formulated for this study. H: Task characteristics and job incumbent's communication network role enactment are significantly related.

Further research which provides insight into the impact that each of the six specific task characteristics have on task-communication network role enactment is summarized below.

Several empirical investigations of the <u>variety</u> task characteristic (and related variables) provide information which suggests how it effects the network role enactment of its incumbent. Lester (1981) examined several aspects of organizational tasks and correlated them to network properties.

The task characteristic pertinent to the present study was routineness. Network involvement was operationalized by the properties of connectedness and radiality. Connectedness is the total number of dyadic linkages that each organizational member has and radiality is the ratio of the number of dyadic linkages of the given organizational member to the number of linkages that other members have. Lester failed to significantly support her hypothesis that: as the task becomes more routine, the employee's connectedness decreases, but her results did lead in that direction. In terms of the present study's focus on role orientation as the network involvement indicant, Lester's work suggests that high routineness leads to the isolate role, rather than the group member or liaison role. The compatibility between routineness and variety leads to the further suggestion that as task variety decreases a job incumbent is more likely to be an isolate than a group member or liaison.

Schriesheim and DeNisi (1981) investigated effects of several task characteristics upon superiors' communication behavior and found that when the task has little routineness (which corresponds to a great deal of variety), instrumental leader behavior is satisfying to the subordinate. But if the task has a great deal of routineness, instrumental behavior from the leader is not appreciated. Because their study focuses on satisfaction with only one communication linkage (leader), instead of quantity of all communication linkages (role) it clearly cannot answer the question of how variety impacts network role enactment. However, it does support the idea that variety affects the one linkage between an organizational member and his/her supervisor.

Finally, Katz and Tushman (1979) looked at communication networks and complexity in a research and development setting. Communication networks were operationalized as the amount of communication that members working on a particular project had with other employees at different levels in the organization. Task characteristics were operationalized along a complexity continuum. They found that research projects--which are near the complex end of the continuum--resulted in more communications within the project group and within the laboratory. Development and technical projects--characterized as less complex--resulted in fewer contacts within the laboratory but more communication contacts outside of the laboratory (though still within the organization). In relation to the present problem, it demonstrated that under high variety conditions, more communication occurs which suggests that the roles of liaison and group member were enacted more frequently.

Although Lester (1981) failed to significantly support her hypothesis, the Katz and Tushman (1979) and the Schriesheim and DeNisi (1981) results provide confirmation for the relationship between job routineness/complexity and communication networks. Therefore the first sub-hypothesis was developed. H_1: Greater variety will more likely lead to the enactment of the communication network roles of group member or liaison rather than isolate.

No research is directly relevant to either <u>autonomy</u> or <u>dealing with others</u> per se, but research considering coorientation of tasks provides information both about how much an employee must work with others, and about how often he/she is allowed to work without consulting others (high

autonomy).

Lester (1984) in a study which extended her previous work hypothesized that the more the total coordination demands of the job increase (thus reducing the amount of autonomy), the more radiality would increase (thus leading to communication role behaviors indicative of a liaison). Her results indicated that as coordination demands increase for a job, the percentage of time spent in communication increased. Pertinent to the present study, Lester found that when a job requires a lot of dealing with others and a low amount of autonomy, the incumbent is more likely to be a liaison rather than an isolate or group member Thus, Lester's results suggest that high autonomy leads to the job incumbent enacting an isolate role in the communication network, while a high dealing with others characteristic of a job, is more likely to lead the incumbent to be a liaison. Therefore sub-hypotheses two and three were developed. H_2: Greater autonomy will more likely lead to the enactment of the communication network role of isolate rather than group member of liaison. H_3: Greater dealing with others needs will more likely lead to the enactment of the communication roles of group member or liaison rather than isolate.

One study sheds light on the relationship between the job characteristic of <u>feedback</u> and communication networks. The work by Schriesheim and DeNisi (1981) found that feedback failed to moderate the relationship between instrumental leader behavior and satisfaction with supervision. This suggests that feedback in a job may not be related to the amount of communication links which define the communication roles. However, this study did not provide a good measurement of communication

network roles because it focused only on satisfaction with one communication linkage, and not even on the occurrence of that link itself.

One could speculate that a job which is characterized by a lot of feedback should require an incumbent to communicate a great deal in order to get that feedback from others (e.g., the supervisor and co-workers). This suggests that as feedback in a job increases, the employee is more likely to be a group member or liaison, rather than an isolate. Though the Schriesheim and DeNisi (1981) results failed to provide evidence that feedback in the job is related to satisfaction with communication with one's superior, it was suggested that the feedback element of the job may have a direct relationship with communication linkages themselves. Therefore, the fourth sub-hypothesis was developed. H_4: Greater task feedback will more likely lead to enactment of the communication network roles of liaison or group member rather than isolate.

Schriesheim and DeNisi (1981) provide evidence pertinent to the relationship between the job characteristic of friendship opportunities and communication network role enactment. They found that if a job incumbent had little opportunity to interact with others, he/she was satisfied with the leaders' instrumental behavior. However, when the task involved many opportunities for the subordinate to communicate with others, there was either no relationship or a negative one between leader behavior and subordinate satisfaction. This would suggest that an employee who gets a chance to develop friendly relations with others is unlikely to develop many task related links. Thus, he/she would be likely to become a isolate.

Roberts & O'Reilly (1978) found that organizational members who enact a

particular role in one network (e.g., task) are very likely to enact that same role in another network (e.g., social). Thus, if a person has a lot of opportunities to develop friendships in the organization, and takes those opportunities--thus becoming a liaison or group member in the social network—then he/she is likely to be a liaison or group member in the task network as well.

These two studies provide conflicting evidence for the relationship between friendship opportunities and task-communication network role enactment. Neither included a good test of the relationship in terms of the present study's problem, though the work by Roberts and O'Reilly is more closely related than that by Schriesheim and DeNisi. Thus the fifth sub-hypothesis was developed in the direction suggested by the former. H_5: Greater friendship opportunities are more likely to lead to the enactment of the communication network roles of liaison or group member, rather than isolate.

No studies were found which investigated the relationship between task identity and communication network role enactment or between related indicators. However, task identity is related to the autonomy and dealing with others. When an employee only does a part of the job (low identity), then that job must be completed (or started) by others. The combination of tasks in order to accomplish the job may require him/her to deal with others in order to coordinate the job on which they all need to work. Again, this need to deal with others suggests that the incumbent may not have a particularly autonomous job. Because identity seems to be related to the amount of autonomy and the need to deal with others in a job, the research

by Schriesheim and DeNisi (1981) suggests that a job high in identity will be likely to lead to the incumbent enacting the role of isolate, and a job low in identity will be likely to lead to an incumbent enacting the roles of either group member or liaison. Therefore, sub-hypothesis six was developed.

H_6: Greater task identity will more likely lead to the enactment of the communication role of isolate rather than those of group member or liaison.

Research Methodology

Subjects

Subjects were 224 employees of six small businesses located in a small midwestern city. Organizations included a grocery store (30), a retail store (38), a bank (60), a real estate agency (18), and city (30) and state (51) police organizations. Small and medium sized organizations were used in an attempt to gain better visibility and to maintain high response rates. Response rates varied among the organizations from 79% to 94% resulting in an overall rate of 86%.

Of the 224 subjects included in the hypothesis test, 47% were males. Ages ranged from 17 to 66 with a mean age of 33.4. Forty five percent had attained only a high school degree or less, while only 4% had achieved a more advanced degree than college. Fifty nine percent of the employees had worked for their respective organizations for 5 years or less, and 30% reported that they supervised at least one other person in the organization.

Variable Operationalization

Communication Network Analysis

The NEGOPY network analysis program was used to identify network roles

(Richards, 1974, 1975; Richards & Rice, 1980). All organizational members were asked to indicate with whom they interact for task purposes both by estimating approximately how many times they interact with each other individual (based on a 1 to 4 scale from "once or twice a month" to "several times a day"), and how important each relationship was to them (on a 1 to 4 scale from "slightly important" to "crucial to survival." A sample of two to three employees from each of the organizations made suggestions regarding improvements in the instructions' clarity, and terminology changes. Those committee members then also completed the revised instrument after approving it, so that high response rates could be obtained (Richards, 1981).

Job Characteristics

The Sims, Szilagyi and Keller (1978) Job Description Index (JDI) instrument was used to measure job characteristics. The JDI includes thirty items measure the six task characteristics of variety, autonomy, identity, feedback, dealing with others, and friendship opportunities. The psychometric properties of the JDI have been previously documented (Peirce & Dunham, 1978; Brief and Aldag, 1978; Griffin, Moorhead, Johnson & Chonko, 1980).

Procedures

Organizations used in this study were selected according to size and availability. Only organizations employing 20 - 75 employees were contacted in order to avoid subject differences based on large organization size differences. and those made up primarily of volunteers were not used. Each organization used in the analysis was obtained through contact with the top manager/executive. The project, in each case, was explained in a telephone

conversation and then a meeting was arranged to more fully discuss the procedures. Each manager who sponsored the project in his/her respective organization provided a list of names of all people employed in it. These were used to develop the network analysis questionnaire. All employees of every organization received individualized questionnaire packets.

Five of the six organizations used for the analysis allowed each employee's name to be identified on his/her questionnaire along with an identification number. Those employees were told that their names were needed so that the network analysis part of the questionnaires could be properly analyzed. In the real estate organization, only identification numbers were used—so that employees would feel that they were anonymous—but records were kept so that questionnaires could be associated with particular employees. All employees were assured that their individual responses would not be made available to any other member of their organization and that only summative information would be returned.

In all organizations, each employee received his/her questionnaire at work and was asked to complete it alone in their free time. In five of the organizations, employees returned questionnaires (in sealed envelopes) to the contact person in the organization. However, at the state police, questionnaires were distributed to the employees along with the bi-weekly information packet and then employees mailed their completed questionnaires back to the author. In all cases, employees were asked to respond within a two week time period.

Results

Preliminary Analysis: Job Characteristics

Means, standard deviations and N sizes for the six task characteristics for the total sample and for each individual organization are included in Appendix A.

A confirmatory factor analysis using the 30 items from the JCI and specifying only six factors was conducted to determine how well the present data conformed to a priori expectations. Because it generally supported the a priori solution, and because the reliabilities were acceptable, and the intercorrelations agreed with previous research, the five factors of variety, autonomy, identity, feedback, and friendship opportunities were used in their original form in the analysis. The dealing with others scale was truncated to a two item version of the dealing with others subscale (items 6 and 11) because the third item failed to load as expected and its inclusion reduced the alpha reliability of the scale. Factor loadings can be obtained from the author.

Coefficient alpha internal consistency reliabilities were computed for each of the six factors, and corresponded favorably with past research. They are included in Appendix A.

Finally, a correlation matrix was computed which indicates the interrelatedness of the six job characteristics and it is included in Appendix A.

Preliminary Analysis: Network Analysis

NEGOPY network analysis was conducted for each of the six organizations. Both frequency of interaction and importance of the

relationship were used in the algorithm. Frequency ratings were cubed to approximate a ratio scale based on how often members talked to one another in a month. The frequency rating (cubed) was then multiplied by the importance rating (Richards, 1975). Because analyses using reciprocated links failed to produce any differentiation among organizational members, the reciprocated only links solution was used in subsequent analyses.

In the total sample (including all six organizations) there were 8 employees classified as liaisons, 13 isolates, 148 group members and 57 others. Seventeen groups were identified. Means, standard deviations and sample sizes for each of the six task characteristics were computed separately for liaisons, group members and isolates and are included in Appendix A.

Hypothesis

A discriminant analysis was conducted in order to determine if job characteristics are significantly related to network role enactment. Network roles were used as the categorical or dependent variables and job characteristics were used as the predictor or independent variables. A hierarchial, forward stepwise model (chosen to minimize Wilks' lambda - which considers both the differences between groups and the similarities within them) produced two discriminant functions. The first function was significant at the .05 level (X^2 = 19.39, p=.04) and was used in the following interpretation of the research questions, although the canonical correlation associated with it indicates that there is quite a weak relationship between the job characteristics and network roles (R=.29). The second function was not significant (X^2 = 6.33; p=.18) and was therefore

dropped. Statistics are included in Table 1.

Table 1

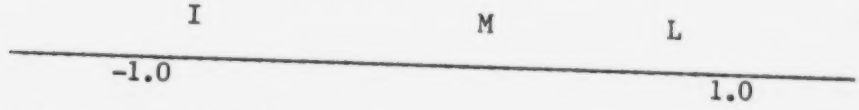
Statistics for Hierarchial Discriminant Analysis

Function	Eigenvalue	Percent of Variance	Canonical Correlation	Wilks Lambda	Chi Square	D.F.	P
1	.087	68	.282	.884	19.39	10	.04
2	.041	32	.199	.960	6.33	4	.18

For the significant function, the group centroids have been plotted in Figure 1 The function primarily discriminantes between isolates as one group, and group members and liaisons as the other group.

Figure 1

Plot of Group Centroids



I = Isolates, centroid=-.98
M = Group members, centroid = .02
L = Liaisons, centroid = .61

The research hypothesis--task characteristics and job incumbent's communication network role enactment are significantly related--was supported by the present data though it seems likely that this relationship is a weak one.

Sub-hypotheses

The significant discriminant function was further interpreted through examining the standardized coefficients in order to provide an answer to the sub-hypotheses. It included five of the task characteristics in the model

before reaching maximum tolerance (Nie, et al., 1975). Those were--in order of entry: dealing with others, autonomy, variety, identity, and feedback. The summary table including the Wilks lambda and significance for each step in the analysis is included in Table 2. Standardized

Table 2

Summary Table of Hierarchial Analysis

Variable Entered	Step	Wilks Lambda	Significance
Dealing with Others	1	.969	.084
Autonomy	2	.949	.085
Variety	3	.913	.026
Identity	4	.899	.034
Feedback	5	.884	.036

discriminant coefficients for each of the five variables are included in Table 3. An examination of the coefficients reveals that variety, feedback, autonomy and identity each contribute about equally to the discrimination

Table 3

Standardized Discriminant Coefficients for Task Characteristics

Variable	Function 1
Variety	.592
Autonomy	-.509
Identity	-.468
Feedback	.511
Dealing with Others	.305

between groups, and relatively more than dealing with others.

The negative loadings for autonomy and identity signify that isolates' jobs (the group with the negative group centroid) are characterized by greater amounts of autonomy and task identity than are group members and liaisons. Examination of the means for these two task characteristics for

the three role distinctions indicates that isolates do indeed have a higher mean value for both autonomy and identity than do group members or liaisons. Conversely, positive coefficients are associated more with positively valued centroids. Therefore, group members and liaisons report that they receive more feedback and have more variety in their jobs than do isolates. Again, examination of the means for feedback and variety by role distinctions indicates that isolates do have smaller means on these task characteristics than do group members or liaisons.

Based on the relatively large standardized discriminant coefficients (reported in Table 3), four of the sub-hypotheses received support from the data. H1: Task variety does distinguish between network role enactment, such that group members and liaisons report more variety in their jobs than do isolates. H2: Autonomy does distinguish between network role enactment, such that isolates report more autonomy in their jobs than do group members and liaisons. H4: Feedback does distinguish between network role enactment, such that group members and liaisons report that they receive more feedback in their jobs than do isolates. H6: Task identity does distinguish between network role enactment, such that isolates report more identity in their jobs than do group members and liaisons.

The standardized discriminant coefficient for dealing with others in the function (see Table 3) was determined to be relatively less influential than those for the first four characteristics, so dealing with others was considered not to help distinguish between the roles. H3: Dealing with others does not distinguish between the communication network roles of isolate, group member and liaison.

Finally, because friendship opportunities did not even enter into the significant discriminant model, it was not considered to be able to distinguish between network roles. H5: Friendship opportunity does not distinguish between the communication network roles of isolate, group member and liaison.

Discussion

A potential problem with the network analysis in this study was the inability of the NEGOPY network analysis procedure to differentiate among the members of two organizations in the sample: the real estate firm and the grocery store. In each, all organizational members (except for 3 isolates in the grocery store) were classified as group members of only one group. Consequently, no liaisons were identified. Although this may be a correct analysis, it seems unlikely that so many people could be linked so closely. Organizational members may have been misclassified as group members when they were really liaisons. Therefore post hoc analysis was conducted which deleted the subjects obtained from the grocery store and the real estate firm.

A stepwise discriminant analysis was conducted including 6 isolates, 100 group members and 11 liaisons. Two discriminant functions were produced but only the first was significant (1st function: $\chi^2 = 17.49$, $p = .02$; 2nd function: $\chi^2 = 6.58$, $p = .08$).

Unlike the original hypothesis test group centroids here distinguished primarily between liaisons on the right and isolates and group members on the left.

Four of the task characteristics contributed to the significant discriminant function. They entered in the following order: dealing with others, feedback, autonomy and identity.

Table 4

Standardized Discriminant Coefficients for Task Characteristics

Variable	Function 1
Autonomy	-.129
Identity	-.583
Feedback	.854
Dealing with Others	.516

The standardized discriminant coefficients (included in Table 4) indicate that feedback is by far the most important predictor in this model because its coefficient is much larger than any of the others. To a lesser extent both identity and dealing with others seem to lend some discriminating ability to the model. This time the function distinguished between liaisons on one hand and group members and isolates on the other. The most important discriminating variable, feedback, had a positive coefficient and thus indicates that liaisons report more feedback in their jobs than do isolates and group members. The dealing with others coefficient is also positive, and thus may also characterize liaisons' jobs. These results are not surprising because liaisons are identified on the basis that they do a great deal of communication within the organization. Finally, the coefficient for identity was negative thus indicating that group members and isolates report more identity in their jobs than do liaisons.

The two analyses have established clear evidence that there is a relationship between task characteristics and communication network roles.

Isolates report that their jobs are characterized by more autonomy and more identity than are other role incumbents; group members report more variety in their jobs and liaisons report more feedback and more opportunities to deal with others in their jobs. These results confirmed the main hypothesis in the study and supported five of the sub-hypotheses.

The examination of the present results in relation to the literature used in developing the rationale for the study, shows that this study was necessary in order to answer the question posed here. Although most of the previous research was supported by these results, none of it was sufficient to answer the question of how task characteristics influence the enactment of communication network roles.

Communication networks have been correlated to other variables in addition to task characteristics. Dallinger (1983) developed a classificatory model and used it to review past research focused on communication networks in organizations. She demonstrated that there are many variables which may effect communication network role enactment. Although research to date has not uncovered many of them, relatively few studies have yet been conducted. That there are so many potential input variables, may partially explain the small effect size found in the present study. The six task characteristics constitute only a small portion of the many possible inputs to communication role enactment. In that light, the current small effect size is not surprising. It does, in fact, add significantly to the total understanding of communication network role enactment by demonstrating that five (variety, autonomy, identity, feedback, dealing with others) task characteristics do impact the enactment of four

network roles. That is, organizational members who do jobs which have a great deal of autonomy and identity are more likely to be isolates in the network. Those who do jobs which have more variety are more likely to be group members. Finally, those who receive more feedback and who must deal with others are more likely to be liaisons.

Additional research is needed to establish more certainty about the status task characteristics as discriminators between the various network roles. Only six task characteristics included in the job characteristics model were included in this study. Others, such as those reviewed earlier (e.g., complexity, routineness, and coordination demands) seem to operate in much the same way as the six task characteristics studied here. However, these results cannot really confirm that conclusion. Thus those characteristics discussed previously, as well as other aspects of tasks should be investigated in relation to network role enactment. Future research into the relationship between network roles and task characteristics should expand the classification of network members to include these additional roles. As more task characteristics are included in the model, they may add enough distinguishing power to differentiate between the additional subcategories of network roles.

Future research into the relationship between network roles and task characteristics should expand the classification of network members to include other roles in addition to the three included in this study. As more task characteristics are included in the model, they may add enough distinguishing power to differentiate between the additional subcategories of network roles.

Finally, future validity studies of the Negopy network analysis program need to be conducted to determine if role distribution output conforms to the actual communication behaviors or perceptions of behaviors of organizational members. For instance, do the members of the grocery store in the present sample see themselves as basically one group (rather than a combination of several groups and liaisons) and is it reasonable to believe that single groups are as large as 126 members, as reported and analyzed by Monge, Farace, Miller and Eisenberg (1983). Once the validity of the measuring and analysis techniques is established, then data from various studies need to be merged to develop a data bank of normative findings (Farace & Johnson, 1974).

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APPENDIX A

Means, Standard Deviations and Sample Sizes for Job Characteristics

Characteristic	Mean	Standard Deviation	Sample Size
Variety (VAR)	15.1	4.6	220
Autonomy (AUTO)	24.2	3.6	224
Identity (IDENT)	16.5	3.3	223
Feedback (FEED)	14.3	4.7	222
Dealing with Others (DEAL)	8.9	1.5	224
Friendship Opportunities (FRIEND)	26.3	5.3	224

Means on Job Characteristics for Individual Organizations

	VAR	AUTO	IDENT	FEED	DEAL	FRIEND
GROCERY	12.9	22.9	16.7	10.5	8.6	24.0
RETAIL	13.8	23.2	17.2	10.9	9.1	25.0
POLICE	15.1	24.4	14.6	11.4	9.1	26.2
STATE POLICE	16.4	24.5	15.8	12.2	8.8	25.4

BANK	14.7	24.2	17.2	11.4	8.7	27.6
REAL ESTATE	19.1	27.2	17.9	14.8	9.8	31.3

Correlation Matrix for Job Characteristics

	VAR	AUTO	IDENT	FEED	DEAL	FRIEND
Variety (VAR)	1.00	.36	.21	.37	.10	.26
Autonomy (AUTO)		1.00	.49	.29	.09	.33
Identity (IDENT)			1.00	.28	.10	.23
Feedback (FEED)				1.00	.16	.43
Dealing with Other (DEAL)					1.00	.42

Alpha Reliabilities for Job Characteristics Inventory

DIMENSION	Sims, et. al. (1978) A	Sims, et. al. (1978) B	Pierce and Dunham (1978)	Brief and Aldag (1978)	Present
Variety	.80	.78	.90	.82	.86
Autonomy	.74	.84	.85	.84	.71
Identity	.77	.75	.89	.83	.88
Feedback	.80	.83	.89	.86	.88
Dealing with Others	.75	.68		.72	.70
Friendship Opportunities	.62	.84		.84	.85

Means, Standard Deviations and Sample Sizes on Task Characteristics by Network Role Type

Variable	Network Role			
	Isolates	Group Members	Liaisons	Others
Variety	12.8	14.9	16.3	15.5
	4.9	4.5	4.6	4.7
	10	141	11	55
Autonomy	26.2	24.1	24.7	24.1
	3.2	3.7	3.4	3.4
	10	144	12	55
Identity	17.7	16.5	15.6	16.5
	2.3	3.3	3.8	3.3
	10	144	12	54
Feedback	9.8	11.8	13.0	11.2
	5.5	3.9	3.5	3.2
	10	143	12	55
Dealing with Others	8.9	8.9	9.8	8.6
	1.4	1.4	.4	1.7
	10	144	12	56
Friendship Opportunities	25.0	26.1	28.0	26.8
	7.3	5.1	4.8	5.1
	10	144	12	56